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| EXAMINER | |
|---|---|
| NEGIN, RUSSELL SCOTT | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/655,540 | CARTER ET AL. | |
| | Examiner | Art Unit | |
| | RUSSELL S. NEGIN | 1631 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14,16,18 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16,18 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Comments*

Applicants' amendments and request for reconsideration in the communication filed on 1 May 2009 are acknowledged and the amendments are entered.

Claims 1-14, 16, 18, and 26 are pending and examined in this Office action.

### *Withdrawn Rejections*

The rejections of claims 1-26 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter are withdrawn in view of amendments filed to the instant set of claims on 1 May 2009.

The rejections of claims 14-26 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention are withdrawn in view of amendments filed to the instant set of claims on 1 May 2009.

The rejections of claims 1-26 under 35 U.S.C. 103(a) as being unpatentable over Gennings et al. [Journal of Agricultural, Biological, and Environmental Statistics, volume 3, pages 1-16, 1998] in view of Gennings et al. [Journal of Agricultural, Biological, and Environmental Statistics, volume 2, 1997, pages 198-211] are withdrawn in view of amendments filed to the instant claims on 1 May 2009.

The rejections of claims 30-31 under 35 U.S.C. 103(a) as being unpatentable over Gennings et al. (1997) in view of Gennings et al. (1998) above, and further in view

of Rosenberg [US PGPUB 2003/0023951 published 30 January 2003; filed 5 April 2001] are withdrawn in view of amendments filed to the instant claims on 1 May 2009.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following rejections are newly applied :

Claims 1-14, 16, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gennings et al. [Journal of Agricultural, Biological, and Environmental Statistics, volume 3, pages 1-16, 1998] in view of Gennings et al. [Journal of Agricultural, Biological, and Environmental Statistics, volume 2, 1997, pages 198-211] in

view of Rosenberg [US PGPUB 2003/0023951 published 30 January 2003; filed 5 April 2001]. The first reference is referred to in this Office action as Gennings et al. (1998); the second reference is referred to in this Office action as Gennings et al. (1997).

Claims 1 and 6 are drawn to a method of detecting interactions among agents in a group or mixture.

Claim 14 is drawn to a method of determining an interaction threshold between agents in a group or mixture.

The study of Gennings et al. (1998), entitled, "Combination threshold models with design optimization along fixed-ratio rays," states in the abstract:

> Threshold models are useful in concentration-effect studies to describe regions of exposure that result in background response. These models are parameterized to estimate the background response, the concentration-effect relationship, and the join-point between the two, called the threshold. If the threshold is different than zero, then it can be inferred that exposure to the chemical at regions below the threshold do not increase risk above background. When the exposure is to many chemicals, fixed-ratio ray designs can be used to assess risk to single chemicals and to specified mixtures of chemicals. This article describes the inference resulting from use of a threshold model for correlated binary data supported by a ray design. An example of the effect of three hepatotoxins in the development of rats is provided. In addition, a two-stage simultaneous optimal design criterion is described for the threshold model along rays of fixed ratios. The approach is illustrated through a simulation study of the hepatotoxin data.

Consequently, Gennings et al. (1998) teaches usage of mixtures and analysis (using fixed ratio rays) of mixture data in rats (test subjects).

The first step (step a) of instant claim 1 recites determining an additivity model from single dose-response data. Gennings et al. (1998) teaches the use of an additivity model in section 2.2 on page 4, entitled, "Estimation of an additivity threshold surface." The first equation in section 2.2 of Gennings et al. (1998) teaches such an additivity model quantitatively.

The second step (step b) of instant claim 1 recites fitting a mixture model in terms of total dose to mixture-dose response data from fixed-ratio rays for said agents in said group or mixture. The third step (step c) of instant claim 1 recites comparing the additivity and mixture models. A threshold mixture model is taught through section 2 on page 3 of Gennings et al. (1998), entitled, "Threshold model for proportional data," and section 2.1 on pages 3-4 of Gennings et al. (1998), entitled, "Simultaneous estimation along each ray using a threshold model." Section 2.3.2 on pages 5-6 of Gennings et al. (1998), entitled, "Comparison of predicted thresholds along each mixture ray to the location of the threshold under additivity," compares the additive and mixture models by using thresholds.

The fourth and fifth steps (steps d and e) of instant claim 1 recite removing a subset of agents from the group or mixture and repeating this step for multiple subsets, respectively. The sixth step of instant claim 1 recites determining the interaction of agents by utilizing the statistical methods based on the results of the fourth and fifth steps of the method. In the example study in section 4 of Gennings et al. (1998) on pages 8-12 of Gennings et al. (1998), Table 4 of Gennings et al. (1998) on page 11 illustrates modeling the interaction of three agents (DEHP, HEPT, and TCE) by removing two of the three agents, and then examining the effects of a mixture on the mixture in Ray 4, which is a 70:1:29 mixture of DEHP, HEPT, and TCE, respectively. Table 3-5 on page 11-12 of Gennings et al. (1998) tabulate a plurality of full-ray groups. Figure 2 on page 10 if Gennings et al. (1998) is interpreted as a statistical hypothesis comparison between an additivity model and a mixture model (steps f and g).

However, Gennings et al. (1998) fails to teach that when the subsets of two agents are removed, the remaining agents (plural) must maintain their relative ratios (i.e. fourth step –step d of instant claim 1).

Gennings et al. (1997) teaches such a phenomenon in their study, entitled "Detection of departures from additivity in mixtures of many chemicals with a threshold model." Specifically, in comparing the plots Figures 1a and 1b on page 200 of Gennings et al. (1997), a subset of chemicals are removed and a subset of chemical remain. As is stated in the Figure caption:

> Figure 1. Three-dimensional representation of a threshold additivity surface between four chemicals over dose ranges of Chemical 1 and Chemical 2 when: (a) Chemical 3 and Chemical 4 are not included in the mixture (= 0) and (b) Chemical 3 = 0.1 and Chemical 4 = 0.1.

Consequently, while in Figure 1B, all of the constituents are in the mixture, in Figure 1A of Gennings et al. (1997), the subset of chemicals 3 and 4 are removed, leaving chemicals 1 and 2.

The purpose of the study of Gennings et al. (1997) is stated in the introduction, which states, "The evaluation of risk associated with mixtures of chemicals is often needed when the number of chemicals in the mixture is large when the concentration of individual chemicals is low."

Gennings et al. (1997) and Gennings et al. (1998) do not teach the software required to execute the statistical methods.

The application of Rosenberg teaches MATLAB for advanced statistical modeling and data analysis (see title and abstract). MATLAB is computer software that automates mathematical calculations.

With regard to claim 6, the first step (step a) of instant claim 6 recites fitting a polynomial additivity to dose-response data. Gennings et al. (1998) teaches the use of an additivity model in section 2.2 on page 4, entitled, "Estimation of an additivity threshold surface." The first equation in section 2.2 of Gennings et al. (1998) teaches such an additivity model quantitatively. Furthermore, the equation on page 1 of Gennings et al. (1998) illustrates such a polynomial to be used to determine additivity in dose response data. As there are three agents interacting in this specific case of Gennings et al. (1998), the highest order term that is not zero is a cubic term, indicating three components (i.e. second step- step b of instant claim 6).

The third and fourth steps (steps c and d) of instant claim 6 recite removing a subset of agents from the group or mixture and repeating this step for multiple subsets, respectively. The fifth step (step e) of instant claim 6 recites determining the interaction of agents by utilizing the statistical methods based on the results of the third and fourth steps of the method. In the example study in section 4 of Gennings et al. (1998) on pages 8-12 of Gennings et al. (1998), Table 4 of Gennings et al. (1998) on page 11 illustrates modeling the interaction of three agents (DEHP, HEPT, and TCE) by removing two of the three agents, and then examining the effects of a mixture on the mixture in Ray 4, which is a 70:1:29 mixture of DEHP, HEPT, and TCE, respectively. Table 3-5 on page 11-12 of Gennings et al. (1998) tabulate a plurality of full-ray groups. Figure 2 on page 10 if Gennings et al. (1998) is interpreted as a comparison between an additivity model and a mixture model (steps f and g).

However, Gennings et al. (1998) fails to teach that when the subsets of two agents are removed, the remaining agents (plural) must maintain their relative ratios (i.e. third step of instant claim 6).

Gennings et al. (1997) teaches such a phenomenon in their study, entitled "Detection of departures from additivity in mixtures of many chemicals with a threshold model." Specifically, in comparing the plots Figures 1a and 1b on page 200 of Gennings et al. (1997), a subset of chemicals are removed and a subset of chemical remain. As is stated in the Figure caption:

> Figure 1. Three-dimensional representation of a threshold additivity surface between four chemicals over dose ranges of Chemical 1 and Chemical 2 when: (a) Chemical 3 and Chemical 4 are not included in the mixture (= 0) and (b) Chemical 3 = 0.1 and Chemical 4 = 0.1.

Consequently, while in Figure 1B, all of the constituents are in the mixture, in Figure 1A of Gennings et al. (1997), the subset of chemicals 3 and 4 are removed, leaving chemicals 1 and 2.

With regard to independent claim 14, the article of Gennings et al. (1997), entitled, "Detection of departures from additivity in mixtures of many chemicals with a threshold model," states on the last seven lines of page 199:

> Suppose that we are interested in studying the interaction among c chemicals in combination, where dose-response information is available on each single chemical. Assume that the existence of a threshold is reasonable for these chemicals. Further, suppose that we are particularly interested in the effect associated with certain combinations of these chemicals. We propose to construct a threshold additivity model that can be used to predict a response at each combination of interest. The observed response at these combination points can then be compared to that predicted under the assumption of additivity.

Consequently, Gennings et al. (1997) teaches a threshold additivity model for the purpose of analyzing groups or mixtures.

Such a threshold additivity model is displayed quantitatively as equation 1.1 on page 201 of Gennings et al. (1997). The top "branch" of equation 1.1 indicates an additivity model. Above a certain threshold, $\delta$, the generation of a region containing a departure from additivity from the elements of the group (i.e. a region of interaction) is witnessed. The results are plotted in Figures such as Figure 1 of Gennings et al. (1997).

However, Gennings et al. (1997) does not teach the specific generalizing linear and nonlinear models mathematically recited in the instant set of claims.

The equation on page 1 of Gennings et al. (1998) teaches a version of the equation recited in amended claim 14 with a three component system.

Claim 2 is dependent from claim 1 with the additional limitation of specifying a plurality of full ray groups. Table 4 of page 11 of Gennings et al. (1998) lists a plurality of full-ray groups.

Claim 3 is dependent from claim 1 with the additional limitation of carrying out the second and third steps of instant claim 1 for the subset of agents. Gennings et al. (1997) carries out such a process in Figure 1. Specifically, in comparing the plots Figures 1a and 1b on page 200 of Gennings et al. (1997), a subset of chemicals are removed and a subset of chemical remain. As is stated in the Figure caption:

> Figure 1. Three-dimensional representation of a threshold additivity surface between four chemicals over dose ranges of Chemical 1 and Chemical 2 when: (a) Chemical 3 and Chemical 4 are not included in the mixture (= 0) and (b) Chemical 3 = 0.1 and Chemical 4 = 0.1.

Consequently, while in Figure 1B, all of the constituents are in the mixture, in Figure 1A of Gennings et al. (1997), the subset of chemicals 3 and 4 are removed, leaving chemicals 1 and 2.

Claim 4 is dependent from claim 1 with the extra limitation of showing an additivity curve compared with a mixture curve. Figure 2 of Gennings (1998) on page 10 illustrates a comparison of additivity (i.e. model predicted) and mixture model (i.e. observed) with the purpose of comparing the two types of statistical analyses.

Claim 5 is dependent from claim 1 with the additional limitation of determining simultaneous confidence bands on the difference between the additivity curve and the mixture curve.

Confidence bands are described in the full paragraph of page 10 of Gennings et al. (1998), which states:

> As evidenced by the data points in Figure 2 and the p values in Table 3, the proportion of prenatal loss across litters is large. The 95% confidence interval for the threshold for DEHP covers the entire experimental region …[and] the threshold interval for total dose along the mixture ray.

The study of Gennings et al. (1998), entitled, "Combination threshold models with design optimization along fixed-ratio rays," states in the abstract:

> Threshold models are useful in concentration-effect studies to describe regions of exposure that result in background response. These models are parameterized to estimate the background response, the concentration-effect relationship, and the join-point between the two, called the threshold. If the threshold is different than zero, then it can be inferred that exposure to the chemical at regions below the threshold do not increase risk above background. When the exposure is to many chemicals, fixed-ratio ray designs can be used to assess risk to single chemicals and to specified mixtures of chemicals. This article describes the inference resulting from use of a threshold model for correlated binary data supported by a ray design. An example

> of the effect of three hepatotoxins in the development of rats is provided. In addition, a two-stage simultaneous optimal design criterion is described for the threshold model along rays of fixed ratios. The approach is illustrated through a simulation study of the hepatotoxin data.

Consequently, Gennings et al. (1998) teaches usage of mixtures and analysis (using fixed ratio rays) of mixture data in rats (test subjects).

Claim 7 is dependent from claim 6 with the additional limitation of specifying a plurality of full ray groups. Table 4 of page 11 of Gennings et al. (1998) lists a plurality of full-ray groups.

Claim 8 is dependent from claim 6 with the additional limitation of carrying out the second and third steps of instant claim 6 for the subset of agents. Gennings et al. (1997) carries out such a process in Figure 1. Specifically, in comparing the plots Figures 1a and 1b on page 200 of Gennings et al. (1997), a subset of chemicals are removed and a subset of chemical remain. As is stated in the Figure caption:

> Figure 1. Three-dimensional representation of a threshold additivity surface between four chemicals over dose ranges of Chemical 1 and Chemical 2 when: (a) Chemical 3 and Chemical 4 are not included in the mixture (= 0) and (b) Chemical 3 = 0.1 and Chemical 4 = 0.1.

Consequently, while in Figure 1B, all of the constituents are in the mixture, in Figure 1A of Gennings et al. (1997), the subset of chemicals 3 and 4 are removed, leaving chemicals 1 and 2.

Claim 9 is dependent from claim 6 with the additional limitation of single chemical data being linked to a linear term in said polynomial model. The linear term in the equation on page 1 of Gennings et al. (1998) is related to single chemical data.

Claim 10 is dependent from claim 9 wherein the additivity model and mixture models are depicted as curves. Claim 13 is dependent from claim 6 with the additional limitation of generating a graphical representation of said polynomial in total dose. Figure 2 of Gennings (1998) on page 10 illustrates a comparison of additivity (i.e. model predicted) and mixture model (i.e. observed) with the purpose of comparing the two types of statistical analyses.

Claim 11 is dependent from claim 6 wherein the polynomial is embedded in a generalized linear model. Claim 12 is dependent from claim 6 wherein the polynomial is embedded in a generalized nonlinear model. The equation on page 1 of Gennings et al. (1998) illustrates both the linear and nonlinear polynomials, based on the number of components in the mixture. While a single-component mixture exhibits linear additivity, multi-component mixtures are fit by a nonlinear model.

Claim 16 is dependent from claim 14 with the further limitation of being applicable to a plurality of full-ray groups. Table 4 of page 11 of Gennings et al. (1998) lists a plurality of full-ray groups.

Claim 18 is dependent from claim 14 by carrying Gennings et al. (1997) out such a process of eliminating a subset of agents. Specifically, in comparing the plots Figures 1a and 1b on page 200 of Gennings et al. (1997), a subset of chemicals are removed and a subset of chemical remain. As is stated in the Figure caption:

> Figure 1. Three-dimensional representation of a threshold additivity surface between four chemicals over dose ranges of Chemical 1 and Chemical 2 when: (a) Chemical 3 and Chemical 4 are not included in the mixture (= 0) and (b) Chemical 3 = 0.1 and Chemical 4 = 0.1.

Consequently, while in Figure 1B, all of the constituents are in the mixture, in Figure 1A of Gennings et al. (1997), the subset of chemicals 3 and 4 are removed, leaving chemicals 1 and 2.

Claim 26 is dependent from claim 14 with the additional limitation of having single chemical data wherein the single chemical data is obtained in test subjects.

The study of Gennings et al. (1998), entitled, "Combination threshold models with design optimization along fixed-ratio rays," states in the abstract:

> Threshold models are useful in concentration-effect studies to describe regions of exposure that result in background response. These models are parameterized to estimate the background response, the concentration-effect relationship, and the join-point between the two, called the threshold. If the threshold is different than zero, then it can be inferred that exposure to the chemical at regions below the threshold do not increase risk above background. When the exposure is to many chemicals, fixed-ratio ray designs can be used to assess risk to single chemicals and to specified mixtures of chemicals. This article describes the inference resulting from use of a threshold model for correlated binary data supported by a ray design. An example of the effect of three hepatotoxins in the development of rats is provided. In addition, a two-stage simultaneous optimal design criterion is described for the threshold model along rays of fixed ratios. The approach is illustrated through a simulation study of the hepatotoxin data.

Consequently, Gennings et al. (1998) teaches usage of mixtures and analysis (using fixed ratio rays) of mixture data in rats (test subjects).

It would have been obvious to someone of ordinary skill in the art at the time of the instant invention to modify the fixed ratio ray optimization study of Gennings et al. (1998) by use of the additivity models of Gennings et al. (1997) wherein the motivation would have been that while Gennings et al. (1998) measures fixed ratio rays in simple ternary systems, Gennings et al. (1997) uses analogous principles with the advantage of investigating additivity in more complex quaternary mixtures [see introduction of Gennings et al. (1997)].

It also would have been obvious to someone of ordinary skill in the art at the time of the instant invention to automate the mixture methods of Gennings et al (1997) and Gennings et al. (1998) by use of the automated statistical techniques of Rosenberg wherein the motivation would have been that the statistical analysis of MATLAB in Rosenberg enables automated and more efficient calculation of statistical data [see title, and abstract of Rosenberg].

Response to Arguments:

Applicant's arguments filed 1 May 2009 have been fully considered but they are not persuasive.

Applicant argues on page 9 of the Remarks with regards to the proportional equation recited in the instant independent claims (i.e. step d of claim 1), that Figure 1 of Gennings et al. fails to teach this proportional relation. This is not persuasive

because, first, there is no limitation requiring chemical species i to be different from chemical species j (in other words i could equal j). Second, even assuming, *en arguendo*, that i and j are not the same species of chemical, the caption of Figure 1 of Gennings et al. (1997) indicates that Chemical 3 = 0.1 and Chemical 4 equals 0.1. Consequently, whenever the ratio of chemical 1 to chemical 2 is unity, the limitations of the instant claims are met. Since the scales in Figure 1a and 1b are equivalent and encompassing the parity line, Figure 1 of Gennings et al. (1997) comprises concentrations of Chemicals 1 through 4 that meet this proportionality limitation of the instant independent claims.

As an aside, applicant states on page 11 of the Remarks:

> Applicant notes that, in the Office action dated, October 29, 2009 [sic], Examiner failed to act on pending [but now cancelled] claims 30-31 of the application.

In response, applicant is directed to page 22 of the Office action of 29 October 2008.

***Conclusion***

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the central PTO Fax Center. The faxing of such pages must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CFR § 1.6(d)). The Central PTO Fax Center Number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Negin, whose telephone number is (571) 272-1083. The examiner can normally be reached on Monday-Friday from 7am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Marjorie Moran, Supervisory Patent Examiner, can be reached at (571) 272-0720.

Information regarding the status of the application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information on the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/RSN/
Russell S. Negin
11 July 2009

/Marjorie Moran/
Supervisory Patent Examiner, Art Unit 1631